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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/080,709	02/25/2002	Katsunari Ohsono	219973US3	8295

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EXAMINER

PALABRICA, RICARDO J

ART UNIT PAPER NUMBER

3641

DATE MAILED: 06/13/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/080,709

Applicant(s)

OHSONO ET AL.

Examiner

Rick Palabrica

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 June 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) 6-12 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

1. Applicant's election with traverse of species A in Paper No. 6 is acknowledged.

Applicant's traversal of the species election requirement on the grounds that the species are not patentably distinct. This implies that the species identified by the examiner in the 4/12/2002 Office Action do not possess mutually exclusive characteristics and are obvious variants of each other. If so, then applicant should clearly admit on record that this is the case in a response to this Office Action. Applicant also alleged that a search and examination of all claims would not place a serious burden on the examiner. This is not found persuasive because each species would require a separate search in view of their mutually exclusive characteristics, and these individual searches would not be co-extensive *and would thus represent an undue burden on the examiner*

Accordingly, the requirement is still deemed proper and is therefore made FINAL.

2. Applicant has identified claims 1 and 4 as readable on elected species. Upon review of the claims, the examiner noted that claims 2, 3 and 5 are also readable on the elected species. Accordingly, claims 1-5 are examined in this Office Action.

Specification

3. The disclosure is objected to because of the following informalities:
- On page 1, line 13, the acronym, "FP" is undefined.
 - On page 5, line 9, the words "to intend" should be deleted.
 - On page 6, lines 20-23 and on page 8, lines 12-13, the phrase "enable to be lost or made very little" should be re-worded.
 - On page 7, lines 12-13, the phrase "contact is temporarily cancelled" should be re-worded.
 - On page 12, line 16, the phrase "bonded according to a welding" should be re-worded.
 - On page 12, line 17, the metal gasket is not shown in the figure being described.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 1-5 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claims 1 and 3 the term "plate-like" renders the claim(s) indefinite because the claim(s) include(s) elements not actually disclosed (those encompassed by "plate-like"), thereby rendering the scope of the claim(s) unascertainable. See MPEP § 2173.05(d).

Terms such as "neutron absorbing performance", "surplus thickness", "further closed", etc. are relative, they can be given no definite meaning and accordingly they render the claims vague and indefinite, and the metes and bounds thereof are undefined (e.g., see claims 1, 3 and 4).

Claim 2 recites the limitation "the outer shape" in lines 2 and 3. There is insufficient antecedent basis for this limitation in the claim.

Regarding claim 3, the phrase "such as" renders the claim indefinite because it is unclear whether the limitations following the phrase are part of the claimed invention. See MPEP § 2173.05(d).

Regarding claim 3, the phrase "or the like" renders the claim(s) indefinite because the claim(s) include(s) elements not actually disclosed (those encompassed by "or the like"), thereby rendering the scope of the claim(s) unascertainable. See MPEP § 2173.05(d).

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1 and 2 are rejected under 35 U.S.C. 102(b) as being anticipated by Singh (U.S. 6,064,710). Singh discloses an apparatus for transporting and storing nuclear fuel rods comprising a basket having storage cells formed from a honeycomb grid work of metal plates. Said claims read on Fig. 1, 2 and 14 of the apparatus of Singh.

Fig. 2 shows a basket having square-shaped cross section, wherein cutting sections are provided in rectangular plate members having a neutron absorbing material (see Fig. 1 for details), and said plate members are alternately piled up vertically in such a manner as to mutually insert said cutting sections to each other.

Figs. 13 and 14 show a barrel main body, represented by cylindrical inner metal shell (29), which shields gamma rays and forms an inner side of a cavity in a shape aligning with the basket. Note in Fig. 14 that cylindrical inner metal shell (29) is vertically aligned with the basket.

Fig. 13 also shows a neutron shield, which is the cylindrical concrete structure (31), arranged in the periphery of the said barrel main body.

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As to "wherein" clause in claim 1, this is essentially a statement of intended or desired use. Thus is clause, as well as other statements of intended use do not serve to patently distinguish the claimed structure over that of the reference. Note that Singh's apparatus is intended for storing spent fuel assemblies, just like the applicant's. See In re Pearson, 181 USPQ 641; In re Yanush, 177 USPQ 705; In re Finsterwalder, 168 USPQ 530; In re Casey, 152 USPQ 235; In re Otto, 136 USPQ 458; Ex parte Masham, 2 USPQ 2nd 1647.

See also MPEP 2114 that states:

A claim containing a "recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus" if the prior art apparatus teaches all the structural limitations of the claim. Ex parte Masham, 2 USPQ2d 1647.

Claims directed to apparatus must be distinguished from the prior art in terms of structure rather than function. In re Danly, 263 F.2d 844, 847, 120 USPQ 528, 531.

Apparatus claims cover what a device is, not what a device does." Hewlett-Packard Co. v. Bausch & Lomb Inc., 15 USPQ2d 1525, 1528.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1 and 2 are rejected under 35 U.S.C. 103(a) as being unpatentable over either one Wells et al. (U.S. 4,827,139) or Lusk et al. (U.S. 4,666,659) in view of either one of Singh or Hennings (DE 2835392 C2). Either one of Wells et al. or Lusk et al. disclose the applicant's claims except for the plate members with cutting section that make up the basket.

Wells et al. disclose a spent nuclear fuel shipping basket and cask (see Figs. 1-5). Fig. 1 shows a cask (11) containing a spent nuclear basket (13), consisting of a number of cells (14) into which nuclear fuel assemblies (not shown) are inserted for transport. Fig. 3 shows a main barrel body (38), which shields gamma rays and forms an inner side of a cavity in shape that aligns vertically with said basket. A neutron shield (37) is arranged in an outer periphery of said main barrel body.

Lusk et al. disclose a shipping and storage container for spent nuclear fuel (e.g., see Figs. 1-5). Fig. 1 shows a cask having a generally cylindrical assembly (11) with four quadrant baskets (12). Fig. 3 shows a main barrel body (22), which is annular and

acts as a lead shield for gamma rays (see column 4, lines 57+). This main barrel body forms an inner side of a cavity in shape that aligns vertically with said baskets. A neutron shield (16) surrounds the main barrel body (see column 4, lines 30+).

Neither Wells et al. nor Lusk et al. disclose the claimed configuration for the plates that make-up the basket. Note from the discussion in section 5 above that Singh discloses the claimed limitation regarding the plates that comprise the applicant's basket. Hennings teaches a storage frame for spent fuel elements consisting of metal plates containing neutron-absorbing material. Fig. 1 shows the frame being made from rectangular plates with cutting sections provided on both edges, and said plates are arranged to form a square-shaped cross section. One having ordinary skill in the art would have recognized that either one of Singh's or Henning's plate structure can be used for the basket of either one of Wells et al. nor Lusk et al. because they serve the same function of holding spent nuclear fuel and have the same neutron absorbing properties.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the apparatus, as disclosed by either one of Wells et al. nor Lusk et al., by the teaching of either one of Singh or Hennings in order obtain a cask comprising: 1) a basket having square shaped cross section, wherein cutting sections are provided in rectangular plate members having a neutron absorbing material, and said plate members are alternately piled up vertically in such a manner as to mutually insert said cutting sections to each other; 2) a barrel main body which

shields gamma rays and forms an inner side of a cavity in a shape aligning with the basket; and 3) a neutron shield arranged in the periphery of the said barrel main body, as this is no more than the use of conventional designs/techniques within the nuclear art, and an alternative way of forming the basket structure.

7. Claims 3-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over either one of the Wells-Singh combination or the Wells-Hennings combination, as applied to claims 1 and 2 above, and further in view of Horning (U.S. 3,036,964). Either one of the Wells-Singh combination or the Wells-Hennings combination disclosed the applicant's claims except for the specifics regarding the dummy pipe.

In addition to the elements of the cask already discussed in section 6 above, the Wells et al. cask also disclose filler blocks (43) of heat absorbing, neutron absorbing material inserted into the empty spaces between the basket and the wall of the cask (see Abstract, Fig. 3 and column 4, lines 45+). They further disclose that these filler blocks can have different shapes and dimensions, such that when the blocks are assembled in the cask, the basket is held rigidly within the cask (e.g. see claim 1).

Horning teaches a control apparatus for a nuclear reactor (see Figs. 1-3) comprising of filler members (26) in the form of a hollow aluminum container filled with air (e.g. see also column 2, lines 35-40 and column 3, lines 73-75). One having ordinary skill in the art would have recognized that Horning's air-filled, aluminum filler would

perform as well as a filler in Wells et al.'s apparatus because it is a metal that has rigidity, has heat-conducting properties, and has neutron absorbing properties.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the apparatus, as disclosed by either one of Wells et al. nor Lusk et al., by the teaching of Horning in order obtain a cask further comprising a dummy pipe containing a heat conduction medium, said pipe having both ends closed, inserted within the cavity and in contact with the plate members of the basket, as this is no more than the use of conventional designs/techniques within the nuclear art, and an alternative way of forming the filler blocks.

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. References E-K further illustrate prior art.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rick Palabrica whose telephone number is 703-306-5756. The examiner can normally be reached on 8:00-4:30, Mon-Fri.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Carone can be reached on 703-306-4198. The fax phone numbers

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for the organization where this application or proceeding is assigned are 703-305-7687 for regular communications and 703-305-7687 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-1113.

RJP
June 7, 2002



HARVEY E. BEHREND
PRIMARY EXAMINER